

1 This invention is related to writing instruments exhibiting indicia, and more
2 specifically to pens and pencils with retractable tips which bear advertising or novelty
3 indicia on their exteriors.

4 **BACKGROUND OF THE INVENTION**

5 Pens and pencils are popular novelty items used to advertise companies, political
6 parties and the like as well as display various design elements and logos that motivate
7 people to purchase and/or use the instrument. In many cases, these pens and pencils are
8 used to create good will between the perceived donor of the writing instrument and
9 potential or actual customers or other recipients to whom they are given. Accordingly,
10 there is a constant search for novel writing instruments that can be used to attract
11 attention and foster good while meeting practical budget constraints of the donor

12 This invention is more specifically directed to writing instruments having a
13 retractable writing tip. Some pens, such as ballpoint pens, and some types of pencils
14 include a retractable writing tip that is operated by the downward pressing of a manually
15 actuated button at the top of the instrument or, alternatively, by the rotation of a part of
16 the writing instrument's body with respect to another part of the body. For clarity, the
17 terms "top" and "bottom" will be used in the context of a pen's conventional writing
18 position with its writing point at the bottom, although it is clear that the pen can be
19 oriented otherwise during use and/or storage.

20 Figure 1 hereto is an example of a prior art ballpoint pen, and is utilized to
21 identify the basic parts of the pen as comprising a generally tubular body10 disposed
22 about a longitudinal axis 25, and consisting of a lower body portion11 and an upper body
23 portion 13. The upper and lower body portions are typically separable, with the top

1 portion typically screwing into the bottom portion or vice-versa. A clip 14 is secured to
2 the upper body portion by any of a number of suitable and well-known methods. A
3 cartridge unit 20 having an ink reservoir is positioned within the body 10 of the pen, and
4 terminates at its bottom in a writing tip 22. The cartridge forms a reservoir 21 for the ink
5 dispensed by the pen at its tip, and is typically replaceable when the upper and lower
6 body portions are separable.

7 The cartridge unit 20 is mounted for longitudinal sliding reciprocal movement
8 within the body 10 of the pen. A spring 24 surrounds the lower end of the cartridge, and
9 is captured between the lower narrowed end of the lower body 11 and a radially enlarged
10 portion 23 of the cartridge unit 20. The spring 24 is sufficiently compressed to urge the
11 cartridge upward and, consequently, to urge the writing tip upward into a retracted
12 position within the bottom region of the lower body portion 11.

13 The upper body portion 13 typically contains the protracting and retracting
14 mechanism by which the writing tip is selectively deployed and retracted in the
15 longitudinal direction, and numerous structures for accomplishing this function are
16 known in the art. As will be apparent, the invention herein is not limited to any particular
17 protraction/retraction mechanism, but is responsive to the longitudinal movement of the
18 cartridge or equivalent pencil structure however induced. In Figure 1, the longitudinal
19 movement is induced by the manual pressing of button 30 which protrudes through a
20 central hole formed in the top of the pen's body. As known to those of ordinary skill in
21 the art, the pressing of the button causes the interior end of the button to push downward
22 on the cartridge unit 20 against the spring 24. When the button is released, and the spring
23 moves the cartridge upward, the cartridge's upward progress is blocked by a gearing

1 arrangement that has been rotated during the downward longitudinal movement so as to
2 now engage an interior blocking surface formed on the inner surface of the pen's upper
3 body. The result is the deployment of the writing tip in its protracted position. When the
4 button 30 is pressed again, the gear again rotates to clear the blocking surface as the
5 button is released, resulting in a full retraction of the writing tip. As noted above, the
6 many mechanisms for carrying out this function are well known in the art, and a detailed
7 description is unneeded.

8 SUMMARY

9 The invention herein is directed to a writing instrument formed about a generally
10 longitudinal axis, such as a pen or pencil, and having a generally longitudinally
11 retractable tip. The writing instrument further includes a design element, such as a logo,
12 positioned on its clip or other exterior body location. The writing instrument further
13 includes means responsive to the longitudinal movement of the writing tip to rotate the
14 design element into a first position when the tip is in its protracted position, and into a
15 second position when the tip is in its retracted position. Additional details will be
16 provided in the following Description of the Preferred Embodiment, of which the
17 drawings form a part.

18 THE DRAWINGS

19 In the drawings,

20 Figure 1 is a longitudinal sectional view of a pen constructed in accordance with
21 the prior art;

1 Figures 2A and 2B are front elevation views in schematic of a writing instrument
2 constructed in accordance with the invention and with writing tip in its protracted and
3 retracted positions, respectively;

4 Figure 3 is a side elevation view in schematic of a writing instrument constructed
5 in accordance with the invention;

6 Figure 4 is an enlarged fragmentary view, in schematic, of the rotating logo
7 assembly of Figure;

8 Figure 5A and 5B are respectively enlarged fragmentary views, in schematic, of
9 the rotating logo assembly of Figure 4 corresponding to the preferred protraction and
10 retraction positions of the writing tip.

11 **DESCRIPTION OF THE PREFERRED EMBODIMENT**

12 Turning initially to Figures 2A and 2B, front elevation views are shown in
13 schematic of a writing instrument constructed in accordance with the invention and with
14 its writing tip 22 in the protracted and retracted positions, respectively. A Chevrolet logo
15 is shown affixed to the pen's clip 14 by way of example. As illustrated in Figures 2A and
16 2B, the logo rotates approximately 90° when the tip is retracted to attain a display that is
17 oriented generally perpendicular to the pen body. As such, the logo is optimally
18 displayed in its normal "horizontal" position (Figure 2B) when the pen is not being used
19 and is, for example, clipped instead to the user's shirt pocket. When the button 30 is
20 pressed to deploy the writing tip 22, the logo is rotated 90°. This feature is particularly
21 beneficial for, but not limited to, logos that are wider than they are tall. Such logos are
22 typically just printed on the pen, affixed in a less preferred fixed orientation to the pen, or

1 affixed in the preferred orientation but made smaller than desired to avoid interference
2 with the user's grip or hand movement when writing.

3 While possessing a novelty quality that commands a viewer's attention, the
4 rotating design element of the present invention makes the pen memorable and is visually
5 interesting. The visual effect makes the logo or other design element more memorable
6 than a fixed logo/element as well, since it is the focus of the viewer's attention for a
7 longer period, and commands repeated focus each time the logo/element rotates.
8 Moreover, the rotation reorients the logo away from a position that might contact the
9 user's hand while writing and thereby interfere with user's comfort or ability to write.
10 Lastly, the orientation of the logo or design element is a visual indication of whether the
11 writing tip is retracted, minimizing the risk that the pen is accidentally stored within the
12 user's shirt pocket with its tip extended—an accident which has undoubtedly resulted in
13 numerous ink-stained shirts being laundered each day with varying degrees of success.

14 Figure 3 is a side elevation view in schematic of the writing instrument of Figure
15 2, illustrating the mechanism by which responsive rotation is generated. The pen's
16 pocket clip 14 includes a generally radially-extending base portion 14a affixed to the
17 upper body 13 of the pen, and a relatively longer, generally longitudinally-extending
18 portion 14b which is configured to engage the user's shirt pocket in the conventional
19 manner. The clip 14, and both its portions 14a, 14b, preferably have a generally U-
20 shaped cross-section.

21 A generally "L"-shaped connection rod 54 is coupled for longitudinally
22 responsive movement at its proximal end to the pen's cartridge unit 20 by such means as
23 a bracket 56 attached to a generally tubular inner barrel structure 58 into which the pen's

1 cartridge unit is inserted. The inner barrel structure may be configured simply as a
2 longitudinally-extending cap which fits over the cartridge and may conveniently be
3 integrally formed with the pen's button 30. Alternatively, the top end of the barrel
4 structure can be close-ended, and can protrude through the top of the pen's upper body to
5 perform the function of the button.

6 From its proximal end, the connecting rod 54 extends generally radially outward
7 through the pen's upper body 13 via a longitudinally-extending slot that accommodates
8 the rod's longitudinal movement. The slot is hidden behind the base 14a of the pen's clip
9 14 and is accordingly not readily visible to a person viewing the pen. The radially-
10 extending portion of the rod 54 extends through the interior channel defined by the clip's
11 U-shaped structure so that the rod's radially-extending segment 14a is substantially
12 shielded from view. The dimensions of the clip's base 14a are sufficient to
13 accommodate, and generally mask from view, the longitudinal movement of the radially-
14 extending rod segment 14a that occurs when the writing tip is deployed and retracted.

15 As the rod's radially-extending portion 54a approaches the inner wall of the clip
16 portion 14b, the rod 54 is bent to form a generally longitudinally-extending segment 54b
17 that moves reciprocally within the longitudinally-extending portion of the clip as the
18 writing tip is deployed and retracted. The longitudinal portion of the rod remains
19 generally hidden from view by the clip's generally U-shaped exterior.

20 As illustrated in Figures 2-4, a logo assembly 57 is mounted for rotation on the
21 longitudinally-extending portion of the clip 54. In simplest form, and as best illustrated
22 in Figure 4, the logo assembly 57 preferably comprises a rotating design element 58
23 mounted on the exterior of the clip so as to be visible to viewers, a rotating inner disk 60

1 positioned within the interior channel of the clip, and a shaft 62 that mechanically
2 couples the disk 60 to the design element 58 through a hole formed in the clip. Those of
3 ordinary skill in the art will recognize that the design element, disk and shaft rotate about
4 a generally radially-extending axis of rotation 64 that passes through the center of the
5 shaft.

6 As illustrated in Figures 3-5, the distal end 54b of the connecting rod 54 is
7 coupled to the inner disk 60 of the logo assembly a distance from the axis of rotation so
8 that longitudinal movement of the rod's distal end exerts a torque about axis 64 on the
9 disk, causing the disk to rotate. The disk's rotational movement is transferred through the
10 clip 14 to the logo assembly via the shaft 62.

11 The degree of rotation induced by the rod is a matter of coupling the rod to the
12 geometrically correct region of the disk. As illustrated in Figure 5, a rotation of 90° is
13 generated by locating the region on the disk which will move through a 90° arc in
14 response to the longitudinal distance traveled by the connecting rod as the writing tip is
15 deployed and retracted. Radially outward regions on the disk travel over lesser arcs than
16 radially inner regions on the disk for a given longitudinal movement of the rod. At the
17 same time, the amount of force required to cause the rotation increases as the point of
18 coupling moves inward towards the axis of rotation, and the tip of the rod follows a less
19 linear path that is tactilely less preferable. The dimensions of the disk are accordingly
20 chosen to provide the correct balance so that the movement of the writing tip and rod are
21 smooth and induced with an acceptable degree of force, while the degree of longitudinal
22 rod movement causes the desired degree of logo rotation. Structures other than a disk
23 may, of course, be employed to couple the rod to the rotating design element. Fir

1 example, a lever may be affixed to the shaft to receive the distal end of the rod, or the
2 shaft can be directly contacted by the rod. All of such alternative structures are within
3 the intended scope of the invention.

4 While the foregoing description includes detail that will enable those skilled in the
5 art to practice the invention, it should be recognized that the description is illustrative in
6 nature and that many modifications and variations will be apparent to those skilled in the
7 art having the benefit of these teachings. It is accordingly intended that the invention
8 herein be defined solely by the claims to be appended to the completed patent
9 application, and that the claims be interpreted as broadly as permitted in light of the prior
10 art.